

CLAIMS

What is claimed is:

1. An exercise machine, comprising:

a support frame;

a single resilient elongate rod linked to the support frame, the resilient elongate rod configured to provide resistance for use in exercise; and

a variable resistance system linked to the single resilient elongate rod, the variable resistance system being configured to utilize the resilient elongate rod to provide a variable amount of resistance for use in exercise.
2. The exercise machine of claim 1, wherein the support frame includes an upright support member.
3. The exercise machine of claim 2, wherein the single resilient elongate rod is coupled to the upright support member of the support frame.
4. The exercise machine of claim 1, wherein the single resilient elongate rod includes a first end, a second end, and a center portion, the first end, the second end, and the center portion moving during exercise.
5. The exercise machine of claim 1, wherein the variable resistance system includes a cable and pulley system.

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6. The exercise machine of claim 5, wherein the variable resistance system includes a lever arm.

7. The exercise machine of claim 6, wherein the amount of mechanical advantage provided by the lever arm can be varied to change the amount of resistance needed to flex the resilient elongate rod.

8. The exercise machine of claim 7, further comprising a lever arm length regulator adapted to change the effective length of the lever arm to vary the mechanical advantage provided by the lever arm.

9. The exercise machine of claim 8, further comprising a lead screw coupled to the lever arm length regulator to change the effective length of the lever arm.

10. The exercise machine of claim 9, wherein the lead screw is automatically adjustable by the user utilizing an electronic weight selector control that operates in connection with the variable resistance system.

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11. An exercise machine, comprising:

a support frame;

at least one resilient elongate member having a first end, a second end, and an intermediate portion, wherein the intermediate portion is linked to the support frame; and

a cable and pulley system coupled to the support frame and the at least one resilient elongate member, the cable and pulley system having at least one cable adapted to be moved by the user, wherein movement of the at least one cable causes movement of the first end, the second end, and the intermediate portion of the at least one resilient elongate member.

12. The exercise machine of claim 11, wherein the cable and pulley system includes a plurality of pulleys.

13. The exercise machine of claim 11, wherein a single cable is routed through the plurality of pulleys such that a user can displace at least a first end of the cable during exercise.

14. The exercise machine of claim 12, wherein the cable and pulley system provides a compound effect allowing the user to displace at least a first end of the cable and pulley system a greater amount than the ends of the single resilient elongate rod are displaced.

15. The exercise machine of claim 14, wherein the compound effect of the cable and pulley system allows the user to displace both ends of the cable a greater amount than the ends of the single resilient elongate rod are displaced.

16. The exercise machine of claim 11, wherein the cable and pulley system is included as part of a variable resistance system.

17. The exercise machine of claim 16, wherein the single resilient elongate rod is included as part of a resistance assembly.

18. The exercise machine of claim 17, wherein the resistance assembly includes a secondary cable and pulley system.

19. The exercise machine of claim 18, wherein the cable and pulley system of the resistance assembly cooperates with the cable and pulley system of the resistance assembly to allow a user to exercise utilizing resistance from the resilient elongate rod.

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20. An exercise machine, comprising:

a support frame;

a single resilient elongate rod positioned adjacent to the support frame, the resilient elongate rod configured to provide resistance for use in exercise; and

an resistance selector system cooperating with the single resilient elongate rod, the electronic resistance selector system being configured to vary the amount of resistance provided by the single resilient elongate rod during exercise.

21. The exercise machine of claim 20, wherein the resistance selector system comprises a electronic resistance selector system.

22. The exercise machine of claim 21, wherein the electronic resistance selector system includes a variable resistance system and an electronic weight selector control.

23. The exercise machine of claim 22, wherein the electronic weight selector control allows a user to automatically select the amount of resistance to be utilized during an exercise routine.

24. The exercise machine of claim 22, wherein the electronic weight selector control includes one or more preprogrammed exercise routines.

25. The exercise machine of claim 24, wherein the one or more preprogrammed exercise routines automatically identify a series of exercises to be conducted by the user.

26. The exercise machine of claim 24, wherein the one or more preprogrammed exercise routines automatically selects the number of sets and repetitions to be performed for each exercise to be conducted by the user.

27. The exercise machine of claim 24, wherein the exercise machine automatically detects the number of sets and repetitions conducted by the user.

28. The exercise machine of claim 27, wherein the one or more preprogrammed exercise routines automatically selects the amount of resistance for each exercise to be conducted by the user.

29. The exercise machine of claim 28, wherein the user can modify various parameters related to the preprogrammed exercise routines including the numbers of sets, number of repetitions, resistance to be utilized, and the exercise to be performed.

30. The exercise machine of claim 23, wherein the electronic weight selector control includes a plurality of selector buttons for changing various parameters of the exercise machine.

31. The exercise machine of claim 30, wherein the plurality of weight selector buttons are adapted to change the amount resistance to be utilized during an exercise machine.

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32. An exercise machine, comprising:
- a support frame having an upright support member;
 - at least one resilient elongate rod positioned adjacent to the support frame;
 - a cable and pulley system coupled to the support frame and the at least one resilient elongate member, the cable and pulley system having at least one cable adapted to be moved by the user;
 - a squat apparatus movably coupled to the upright support member of the support frame, the squat apparatus being coupled to the cable and pulley system to utilize resistance from the at least one resilient elongate rod.

33. The exercise machine of claim 32, wherein the squat apparatus is movably coupled to the upright support member.

34. The exercise machine of claim 33, wherein the squat apparatus is rollably coupled to the upright support member.

35. The exercise machine of claim 32, wherein the upright component support member includes one or more tracks integrally formed therein.

36. The exercise machine of claim 33, wherein the squat apparatus includes a plurality of rollers positioned in the one or more tracks of the upright component support member.

37. The exercise machine of claim 32, further comprising an electronic resistance selector system cooperating with the at least one resilient elongate rod, the electronic resistance selector system being configured to vary the amount of resistance provided by the single resilient elongate rod during exercise.

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38. An exercise machine, comprising:

a support frame;

at least one resilient elongate rod supported by the support frame, the at least one resilient elongate rod being movable relative to the support frame such that no portion of the at least one resilient elongate rod is fixed in relation to the support frame; and

a mechanism cooperating with the at least one resilient elongate rod, said mechanism being adapted to allow a user to exercise utilizing the resistance from the at least one resilient elongate rod to perform exercise.

39. The exercise machine of claim 38, wherein the mechanism cooperating with the at least one resilient elongate rod comprises a cable and pulley system.

40. The exercise machine of claim 39, wherein a cable of the cable and pulley system is linked to the ends of the at least one resilient elongate rod to utilize resistance from the at least one resilient elongate rod.

41. The exercise machine of claim 40, wherein the center portion of the ends of the at least one resilient elongate rod move closer together when the at least one resilient elongate rod undergoes flexing.

42. The exercise machine of claim 38, further comprising a guide mounted to the support frame, the guide being adapted to minimize lateral movement of the at least one resilient elongate rod.

43. The exercise machine of claim 42, wherein the guide is circumscribed by the center portion of the at least one resilient elongate rod.

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44. An exercise machine, comprising:
- a support frame;
 - at least one resilient elongate rod linked to the support frame, the resilient elongate rod configured to provide resistance for use in exercise;
 - a cable and pulley system linked to the resilient elongate rod; and
 - a variable resistance system linked to the cable and pulley system to utilize resistance from the single resilient elongate rod to provide a variable amount of resistance for use in exercise.